

WORLD METEOROLOGICAL ORGANIZATION

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CBS LEAD CENTRES FOR GCOS

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REPORT OF THE CBS-LC-NOAA/NCEI FOR GCOS

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SUMMARY AND PURPOSE OF DOCUMENT

The document provides a summary of activities of the CBS Region IV Lead Centre-NOAA/NCEI.

DISCUSSION

Background

The National Oceanic and Atmospheric Administration (NOAA) National Centers for Environmental Information (NCEI) serves as the GCOS Lead Center for Region IV and also as the Global Archive and Analysis Center. Region IV stretches from the Canadian Arctic to the equator. It includes three large countries; USA, Canada and Mexico which contain more than 75% of the surface-based observing stations as well as many smaller countries and island nations that provide critical coverage for weather and climate observations throughout the region. The large number of small nations makes the continuing effort of coordination and support an essential part of ensuring the health of the region's observing network.

This report contains a summary of the state of the surface-based global observing system for GSN and GUAN networks with a specific focus on those provided by Region IV members. NCEI provides monthly updates of web accessible GSN and GUAN reports which provide information on the number of hourly, synoptic, and CLIMAT reports received at the Center. The reports are available at <ftp://ftp.ncei.noaa.gov/pub/data/gcos/>.

Representatives from other Lead Centers are invited to review these reports and provide feedback on their usefulness and any recommendations for further changes. There are two basic types of reports; the first providing an annual total of the number of reports received by type and hour of the day and secondly files that provide month-year totals of the number of hourly and synoptic reports received and if CLIMAT data were received

Performance of the RBCN and GSN networks in Region IV

There were 337 CLIMAT stations in the current RBCN inventory for Region IV as of 2019. As with the RBSN surface network, Canada and the U.S. have the greatest number of stations providing CLIMAT reports. The subset of GSN stations consisted of 177 stations in the region.

The number of RBCN stations providing at least nine CLIMAT reports each year has remained above 80% since 2012 (Figure 1), computed as a percentage of the current inventory. Figure 2 shows the reporting frequency of each GSN station in 2019. The same is shown for RBCN stations in Figure 3. The GSN network has remained above 85% since 2010. System outages resulted in several stations providing less than complete annual coverage. This occurred most notably in remote areas for which unscheduled maintenance cannot be readily performed (Table 1). The greater than 90% coverage of stations with good reporting practices in the GSN network since 2015 indicates the benefit that careful monitoring and attention to the performance of a subset

of stations can provide to improving data collection. The very high percentage of GSN stations providing at least 9 months of CLIMAT data in 2019 is particularly noteworthy.

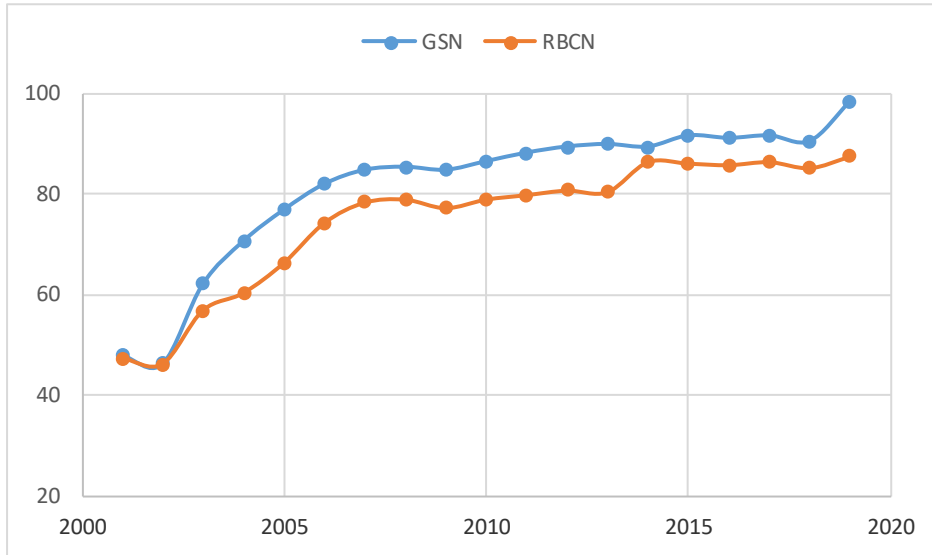


Figure 1. Percentage of Region IV RBCN stations providing CLIMAT reports (red line) and the subset of GSN stations (blue line) providing CLIMAT reports in at least nine months each year from 2001 through 2019 (as a percentage of the 2019 inventory).

GSN, No. months reporting (201901 to 201912), RED=12, BLUE=6 to 11, GREEN=1 to 5, GRAY=0

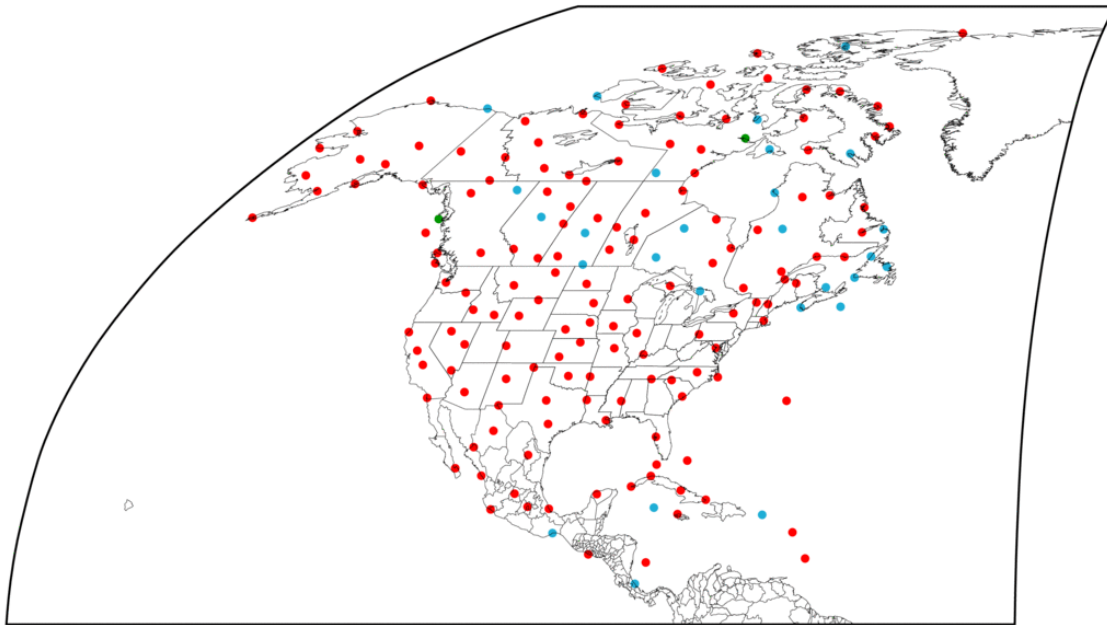


Figure 2. The reporting frequency of the Region IV stations in the GSN network in 2019; stations reporting all 12 months of the year (red), from 6 to 11 reports (blue), 1 to 5 reports (green), and 0 reports (gray).

RBCN, No. months reporting (201901 to 201912), RED=12, BLUE=6 to 11, GREEN=1 to 5, GRAY=0

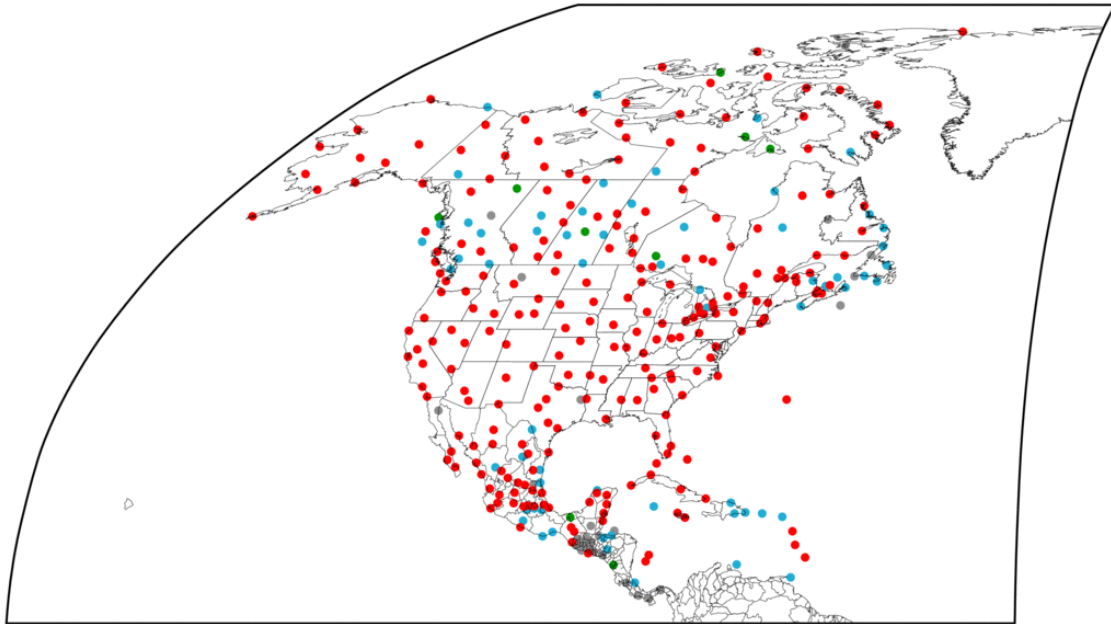


Figure 3. The reporting frequency of the Region IV stations in the RBCN network in 2019; stations reporting all 12 months of the year (red), from 6 to 11 reports (blue), 1 to 5 reports (green), and 0 reports (gray).

The following provides a summary of GSN stations with reporting problems in 2019. There are many other stations that require ongoing personal contact to ensure receipt of data throughout the all areas of the Region. The Region IV Lead Center made direct e-mail contact to resolve reporting issues for more than 100 CLIMAT reports for GSN stations in 2019 across all WMO regions.

Table 1. Region IV GSN stations with reporting issues in 2019.

Data-Months	WMO #	Station Name	Country	Findings
12/2019-Present	71818	CARTWRIGHT/	Canada	Communications issue.
8/2019-Present	70398	Annette Island	United States	Not enough data to generate a CLIMAT Message
4/2018-Present	71828	Schefferville A	Canada	Data issues discovered during Quality Control on Environment Canada's end.
12/2019-1/2020	71923	Ennadai Lake	Canada	Antenna icing issue.
12/2019	78954	Grantley Adams	Barbados	Issues with BUFR Message submissions (NCEI and DWD both confirmed this issue).
12/2019	76833	Salina Cruz	Mexico	Not enough data to generate a CLIMAT Message

10/2019	71321	Iqualuit Climate	Canada	Not enough data to generate a CLIMAT Message
8/2019	71742	Gander Airport	Canada	Not enough data to generate a CLIMAT Message
8/2019	76833	Salina Cruz	Mexico	Unknown issue.
6/2019-8/2019	71823	LA GRANDE IV	Canada	Communications issue.
1/2019-8/2019	71049	Wager Bay (A	Canada	Not enough data to generate a CLIMAT Message
7/2019-9/2019	71407	Kugaaruk Airport, Nunavut	Canada	Communications issue.
7/2019	71907	INUKJUAK A/	CANADA	Data issues discovered during Quality Control on Environment Canada's end.
7/2019	71818	CARTWRIGHT/	Canada	Communications issue.
7/2019	78767	PUERTO LIMON	COSTA RICA	Equipment issue.
5/2018-6/2019	70398	Annette Island	United States	Not enough data to generate a CLIMAT Message
3/2019	71350	HARRINGTON CDA CS	Canada	Power issue.
3/2019	71134, 71594, 73002, and 73017	Multiple	Canada	New stations added by Environment Canada with 2019 Data-Year per WMO's official GSN Station Release sent by Tim Oakley (WMO). Data received beginning with 4/2019.
12/2017-3/2019	71467	Sachs Harbou	Canada	Phone line issue.
2/2019	70086	BARTER ISLAND WSO AP	United States	Not enough data to generate a CLIMAT Message
6/2018-2/2019	71185	DANIELS HARBOUR	Canada	Station removed by Environment Canada with 2019 Data-Year per WMO's official GSN Station Release sent by Tim Oakley (WMO). Subsequently removed this station (#71185) from the GSN Station List in favor of WMO #73024.
11/2017-3/2019	71600	Sable Island	Canada	Station removed by Environment Canada with 2019 Data-Year per WMO's official GSN Station Release sent by Tim Oakley (WMO). Subsequently removed this station (#71600) from the GSN Station List in favor of WMO #73025.
9/2017-3/2019	71197	PORT AUX BAS	Canada	Station removed by Environment Canada with 2019 Data-Year per WMO's official GSN Station Release sent by Tim Oakley (WMO). Subsequently removed this station (#71197) from the GSN Station List in favor of WMO #73026.
1/2019	71049	Wager Bay A	Canada	Not enough data to generate a CLIMAT Message

10/2018-1/2019	71407	Kugaaruk Airport, Nunavut	Canada	Not enough data to generate a CLIMAT Message
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Upper Air Observations

There continued to be a high level of data collected from stations in the GUAN network in the past year, extending benefits of ongoing rehabilitation and system improvement that have occurred in recent decades. In Region IV there were 24 GUAN stations operating in 2019. Performance was best in the U.S. and Canada as shown in Figure 4, with almost all stations having at least 30 soundings each month reaching 30hPa and 10hPa.

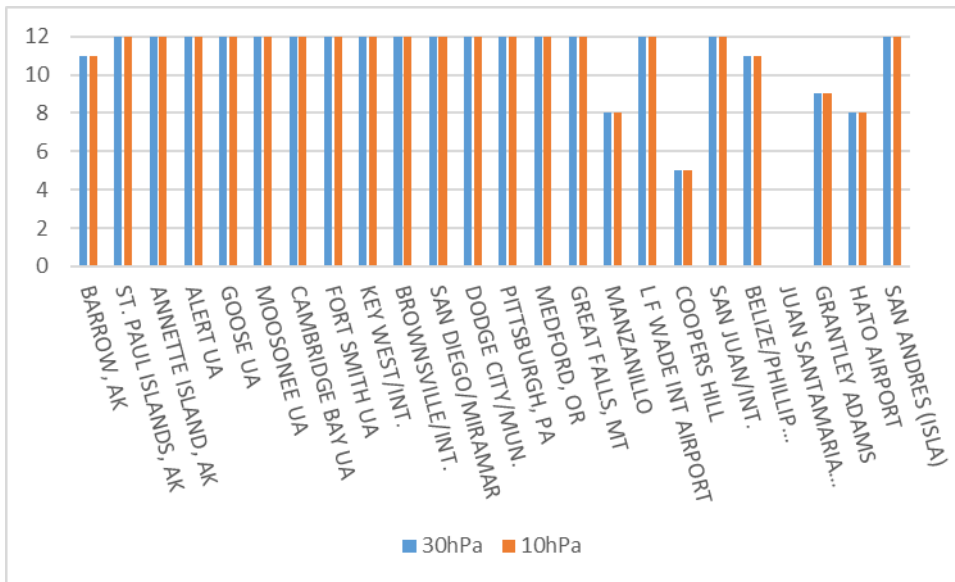


Figure 4. The number of months in 2019 in which at least 30 soundings reached 30 hPa (blue) and 10 hPa (red) for each Region IV GUAN site.